

REMARKS

The Office Action dated April 4, 2006 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-6 are pending and submitted for consideration.

As a preliminary matter, claims 1 and 4 have been amended to address the product by process rejection noted in the Office Action. Specifically, the phrase “an adipic acid based lithium complex thickener” has been positively recited without any product by process limitations, and as such, reconsideration of claims 1 and 4 is respectfully requested.

Claims 1 and 4 stand rejected under 35 U.S.C. §103(a) as being obvious over *Kondoh* (U.S. Patent No. 5,123,884) in view of *Iseya* (U.S. Patent No. 4,597,881). The Office Action took the position that *Kondoh* teaches each and every element recited in claims 1 and 4, except for filling the space formed between the externally toothed gears and the internally toothed gear with a grease that contains a base oil having a kinetic viscosity of not less than 10 mm² at 100 °C and a lithium complex thickener synthesized from adipic acid. However, the Office Action cites to *Iseya* as teaching this feature, and as such, the Office Action concluded that it would have been obvious to one of ordinary skill in the art to have combined the teaching of the references to generate Applicant’s claimed invention. Applicant traverses the rejection and respectfully submits that the

cited combination of references, when taken alone or in combination, fails to teach, show, or suggest each and every limitation recited in claims 1 and 4.

Claim 1, the independent claim from which claims 2 and 3 depend, recites an oscillating internal-meshing planetary gear system. The gear system includes an external gear; and an internal gear of which the number of teeth is slightly different from said external gear, wherein the oscillating rotation of either said external gear or said internal gear relative to the mating gear reduces an input shaft rotation and an output reduced speed is taken off from an output shaft. Further, either said external gear or said internal gear has trochoidal tooth profile and the mating gear has circular-arc tooth profile, and a space formed between said external gear and said internal gear is filled up with a grease which contains at least a base oil having kinetic viscosity being not less than $10 \text{ mm}^2/\text{s}$ at 100°C and a lithium complex thickener synthesized from adipic acid.

Claim 4, the independent claim from which claims 5 and 6 depend, recites a method for improving the durability of an oscillating internal-meshing planetary gear system. The system includes an external gear and an internal gear of which the number of teeth is slightly different from said external gear, either said external gear or said internal gear having trochoidal tooth profile and the mating gear having circular-arc tooth profile, the oscillating rotation of either said external gear or said internal gear relative to the mating gear reducing a input shaft rotation and a output reduced speed being taken off from a output shaft. The method includes filling up a space formed between said external gear and said internal gear with a grease containing at least a base oil having kinetic

viscosity not less than 10 mm²/s at 100 °C and an adipic acid based lithium complex thickener.

Kondoh teaches a planetary speed changing device has an input shaft to which a torque is transmitted from an external device, an output shaft from which a torque of a reduced speed is output, eccentric members coupled to the input shaft through a flexible coupler which permits a relative radial displacement between the input shaft and the eccentric members, and a plurality of externally toothed gears fitted on the eccentric members. The device further includes an internally toothed gear having internal teeth formed by outer pins and meshing with the teeth of the externally toothed gears, inner pin receiving holes formed in the externally toothed gears, inner pins loosely received in the inner pin receiving holes, inner pin holder rings having holes tightly receiving the inner pins, and coupling means for coupling the inner pin holder rings to an output shaft. The inner pin holder rings are arranged on both sides of the combination of the externally toothed gears, and thrust bearings are provided between each the inner pin holder rings and the eccentric members.

Iseya teaches a process for producing a lithium-soap grease which comprises adding a hydroxy-fatty acid having from 12 to 24 carbon atoms, and a dicarboxylic acid having from 8 to 10 carbon atoms to a base oil (I) having an aniline point of from 110° to 130°C at a temperature of less than 100°C with stirring to prepare a uniform dispersion of said acids in the base oil (I), and adding lithium hydroxide to said uniform dispersion with stirring; reacting said acids and lithium hydroxide and dehydrating by heating to a

temperature of 195° to 210° C. The process further includes cooling the reaction mixture to a temperature not higher than about 160°C at a cooling rate of from about 20° to 80°C./hour, and adding a base oil (II) having an aniline point of from 130° to 140°C to the reaction mixture for a period of from 10 seconds to 30 minutes in an amount so that the weight ratio of the base oil (I) to the base oil (II) is from 30:70 to 60:40 and the resulting mixture of the base oils (I) and (II) has a dynamic viscosity as determined at 100°C of from 5 to 50 centistokes and an aniline point of from 125° to 135° C to produce said lithium-soap grease.

However, neither *Kondoh* nor *Iseya*, when taken alone or in combination, teaches, shows, or suggests an adipic acid based lithium complex thickener, as expressly recited in claims 1 and 4. As such, Applicant submits that the cited combination of references fails to teach, show, or suggest each and every limitation recited in independent claims 1 and 4. Therefore, reconsideration and withdrawal of the rejection of claims 1 and 4, along with each claim depending therefrom, is respectfully requested.

Further, with regard to the combination of *Kondoh* and *Iseya*, Applicant submits that the references were improperly combined in support of the §103 rejection. More particularly, M.P.E.P. §2143.01 instructs that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” In re Mills, 916 F.2d 680, 16 USPQ 2d 1430 (Fed. Cir. 1990).” M.P.E.P. §2143.01 further instructs that “[a]lthough a prior art device “may be capable of being modified” to run the way the apparatus is

claimed, there must be a suggestion or motivation in the reference to do so.” Applicant respectfully submits that the cited references do not provide such a suggestion or motivation to combine the references. Although Applicant acknowledges that gears generally have a lubricating material between them, the lubricating material used in the present invention is not a material that is known to be used in the industry, and as such, use of the new lubricating grease constitutes a novel improvement over conventional lubrication methods.

For example, Applicants note that tests have shown that conventional lubricants used in transmission gears, such as those illustrated in the cited prior art, cannot be successfully used with the oscillating internal-meshing planetary gears recited in the present claims. The conventional reduction gear-type transmission systems utilize sliding gear teeth meshing, however the gears in these systems are not similar in shape or operation to the teeth and meshing process of the gears of the present invention, i.e., conventional systems use a sliding contact and the present invention uses a rolling contact. As such, the rolling contacts of the present invention necessitate a lubricant that works with the new type of contact, which Applicants have found to be the novel an adipic acid based lithium complex thickener recited in independent claims of the present application. Thus, reconsideration and withdrawal of the rejection is respectfully requested.

Further, Applicant submits that the only motivation to piece together the two references of the Office Action is found in Applicant’s own application, which

constitutes impermissible hindsight reconstruction of the invention. M.P.E.P. §2141, supports this contention under the heading “Basic Consideration Which Apply to Obviousness Rejections,” where it states that “the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention.” (See also *Hodosh v. Block Drug Co., Inc.* 786 F.2d 1136, 229 USPQ 182 (Fed. Cir. 1986).) The Federal Circuit has clearly held that “the motivation to combine references cannot come from the invention itself.” *Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc.*, 21 F.3d 1068, 30 USPQ 2d 1377 (Fed. Cir. 1993). Applicant submits that the Office Action has not cited any support from within the references themselves that supports a conclusion that the references were combinable. In view of the improper combination of the cited references, withdrawal of the rejection of claims 1 and 4 is respectfully requested.

Claims 2, 3, 5, and 6 stand rejected under 35 U.S.C. §103(a) as being obvious over *Kondoh* (U.S. Patent No. 5,123,884) and *Iseya* (U.S. Patent No. 4,597,881), further in view of *Alexander* (U.S. Patent No. 4,749,502). The Office Action took the position that *Kondoh* and *Iseya* teach each and every element recited in claims 2, 3, 5, and 6, except for the kinetic viscosity of the base oil. However, the Office Action cites to *Alexander* as teaching this feature, and as such, the Office Action concluded that it would have been obvious to one of ordinary skill in the art to have combined the teaching of the references to generate Applicant’s claimed invention. Applicant traverses the rejection and respectfully submits that the cited combination of references, when taken alone or in

combination, fails to teach, show, or suggest each and every limitation recited in claims 2, 3, 5, and 6.

Kondoh and *Iseya* are discussed above. *Alexander* teaches a grease composition having A) an oil component having a major amount of a synthetic fluid having a viscosity of at least 50 cSt at 40° C and a minor amount of a mineral oil having a pour point below -20°C.; and B) a thickener. The oil component of the grease composition preferably comprises between about 30 and 90 wt. % synthetic oil, more preferably between about 40 and about 80 wt. % synthetic oil and from 70 to 10 wt. % and preferably 60 to 20 wt. % mineral oil. The viscosity of the synthetic oil preferably is at least 50 cSt, more preferably at least 100 cSt. at 40° C) The synthetic oil preferably is selected from polyolefins, esters, polyesters, high VI isoparaffins, and mixtures thereof, with polyalphaolefins being particularly preferred. The polyalphaolefins preferably comprise C₈ and C₁₂ monoalphaolefin building blocks.

However, *Alexander* fails to teach, show, or suggest an adipic acid based lithium complex thickener that is positioned between gears, as recited in independent claims 1 and 4. Therefore, Applicant submits that *Alexander* fails to further the teaching of *Kondoh* and *Iseya* to the level necessary to properly support an obviousness rejection. As such, reconsideration and withdrawal of the rejection of claims 2, 3, 5, and 6 is respectfully requested.

In conclusion, Applicant submits that the cited combination of references, when taken alone or in combination, fails to teach, show, or suggest each and every limitation recited in claims 1-6. As such, reconsideration and withdrawal of the rejection of claims 1-6 is respectfully requested. Claims 1-6 are pending and submitted for consideration.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'N. Alexander Nolte', written over a horizontal line.

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